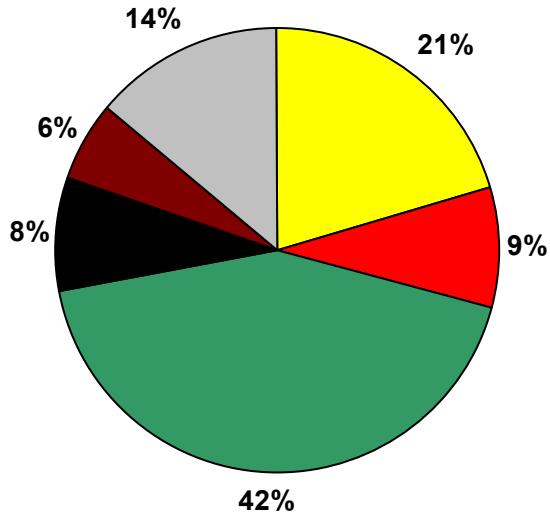


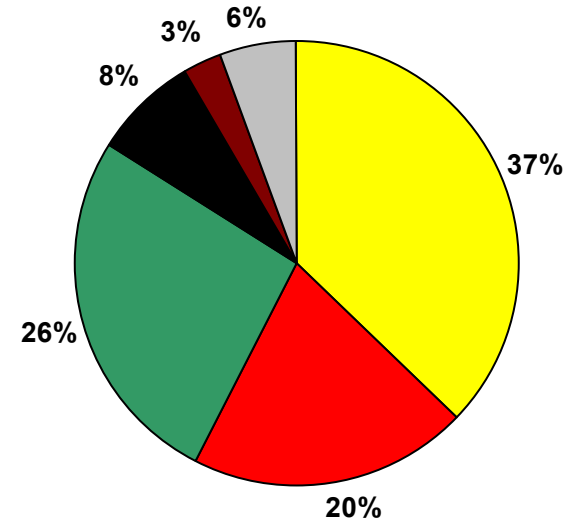
**MONITORING DATA**

**Yellowstone National Park, WY  
2002 Reconstructed Extinction  
YELL2 Monitoring Data (every third day)**

**20% Worst Visibility Days**  
Aerosol Extinction\* = 22 Mm-1 (16 to 40 Mm-1)

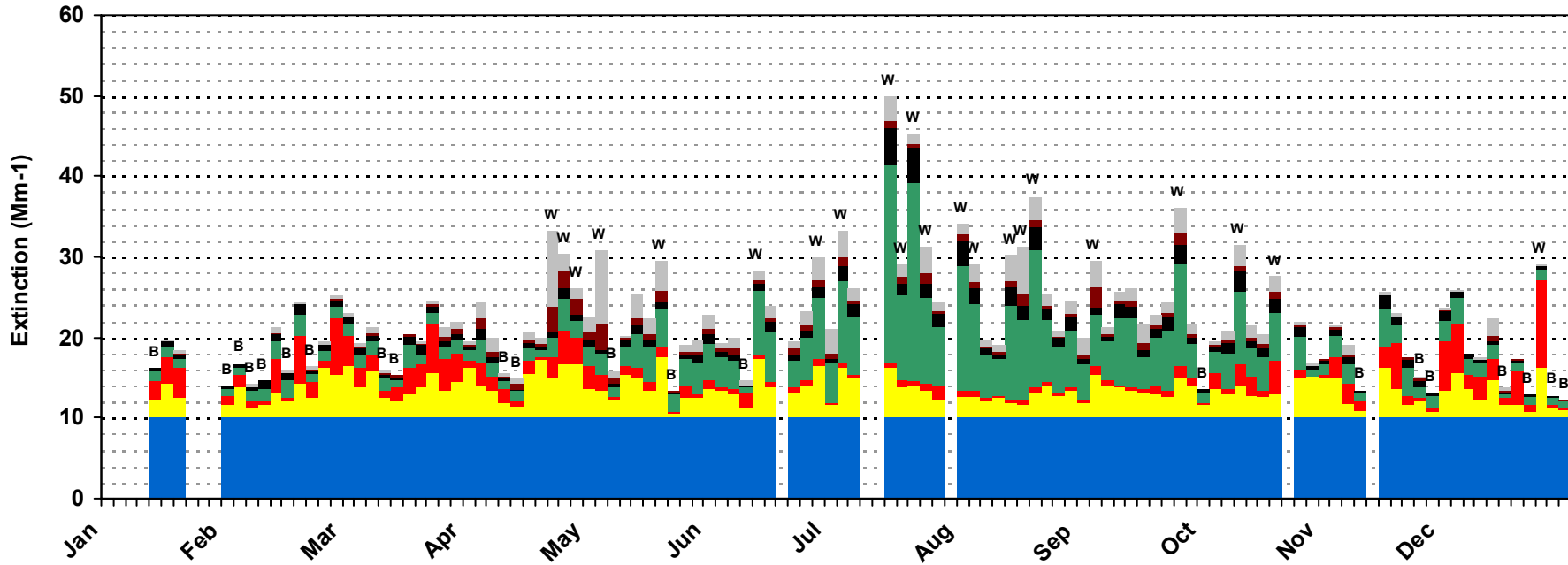


**20% Best Visibility Days**  
Aerosol Extinction\* = 5 Mm-1 (2 to 7 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

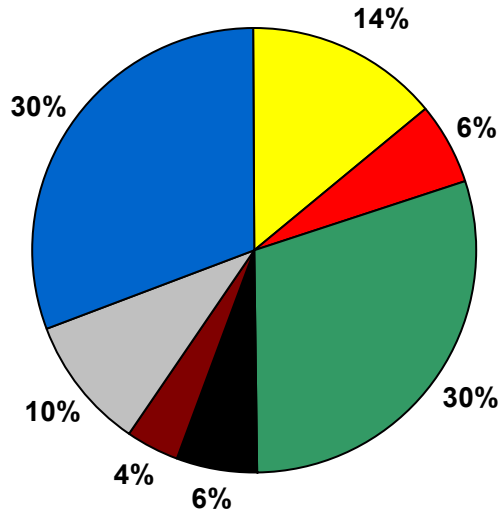
\*Excludes Rayleigh Extinction



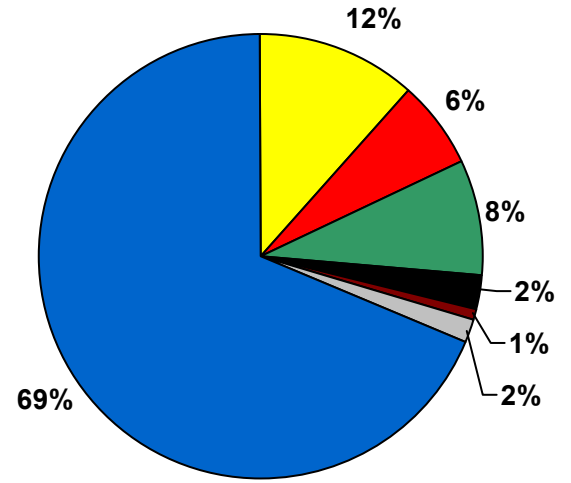
**MONITORING DATA**

**Yellowstone National Park, WY  
2002 Reconstructed Extinction  
YELL2 Monitoring Data (every third day)**

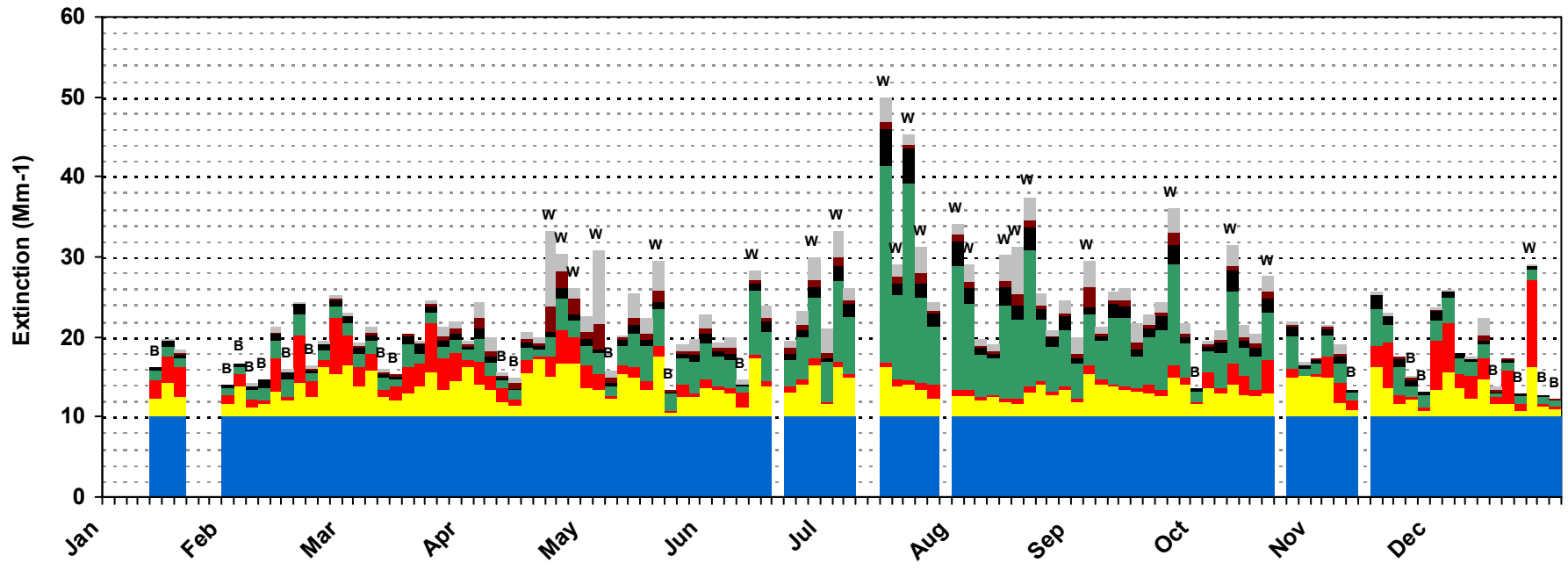
**20% Worst Visibility Days**  
Total Extinction = 32 Mm-1 (26 to 50 Mm-1)



**20% Best Visibility Days**  
Total Extinction = 15 Mm-1 (12 to 17 Mm-1)



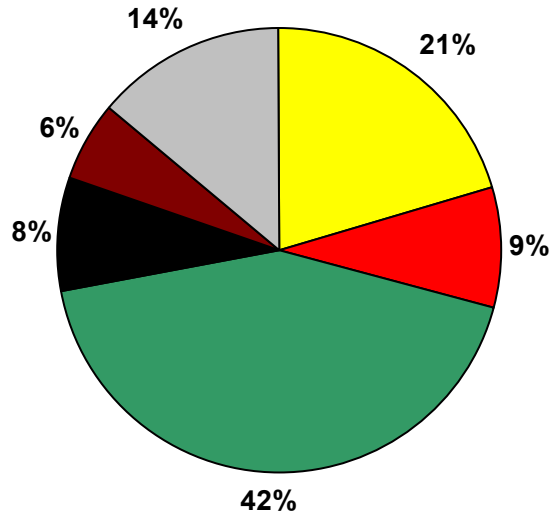
- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



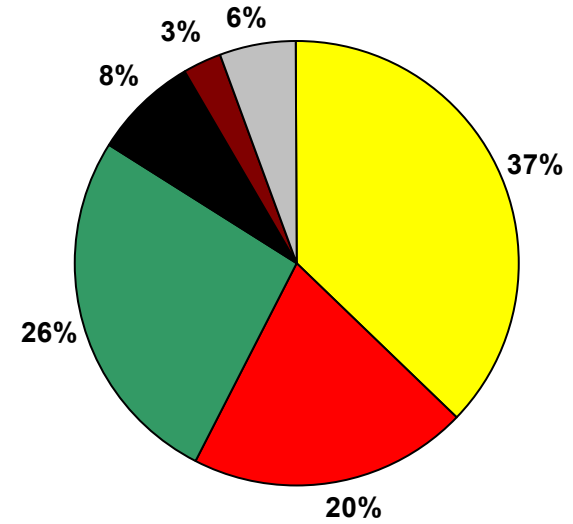
**MONITORING DATA**

**Yellowstone National Park, WY  
2002 Reconstructed Extinction  
YELL2 Monitoring Data (every third day)**

**20% Worst Visibility Days**  
Aerosol Extinction\* = 22 Mm-1 (16 to 40 Mm-1)

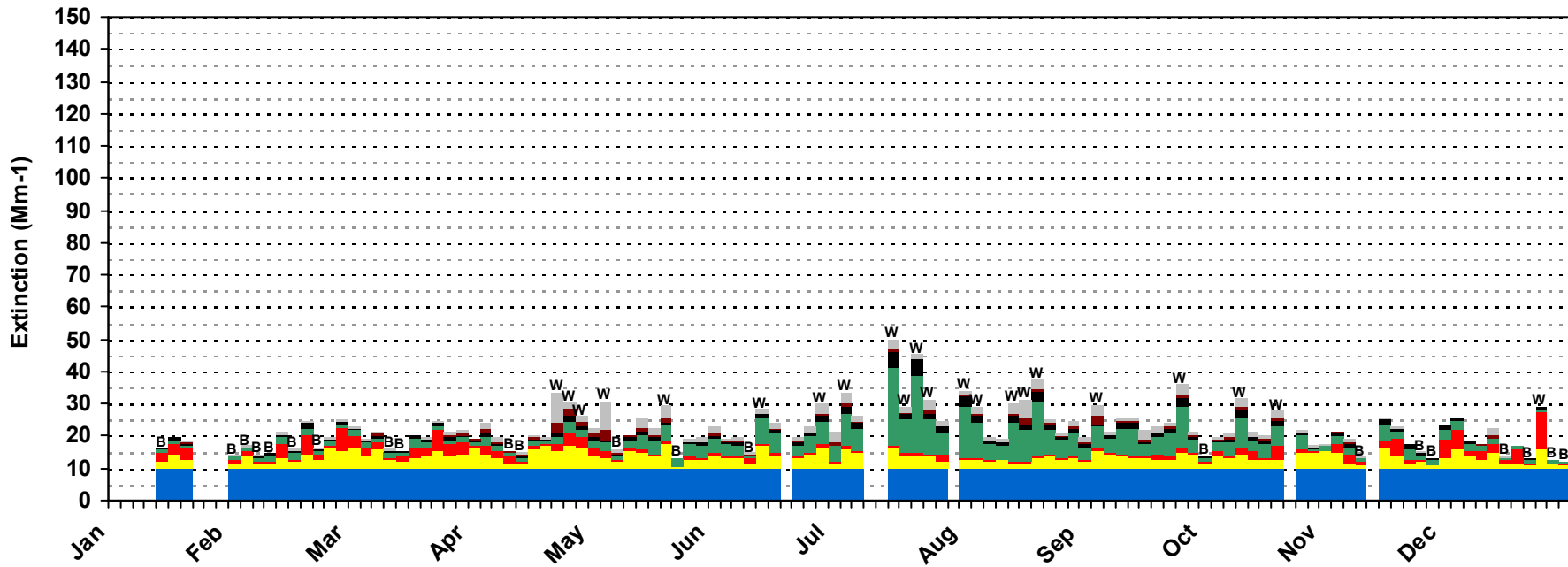


**20% Best Visibility Days**  
Aerosol Extinction\* = 5 Mm-1 (2 to 7 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

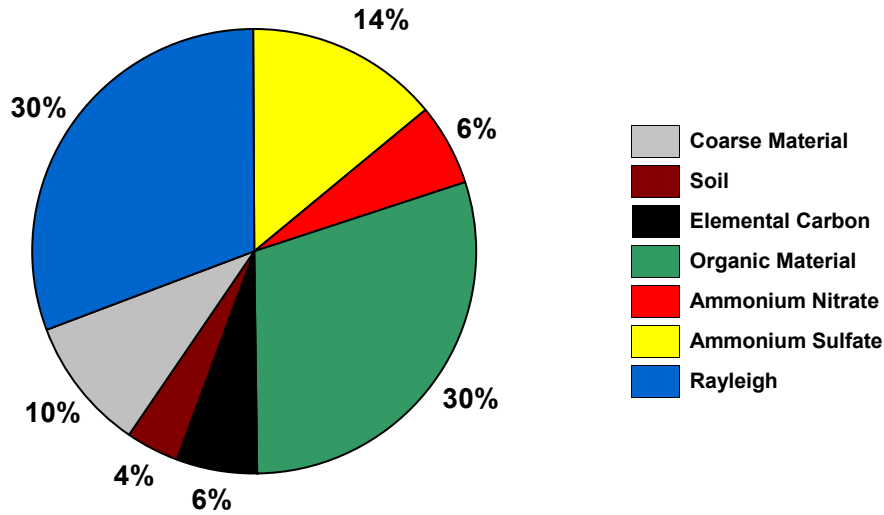
\*Excludes Rayleigh Extinction



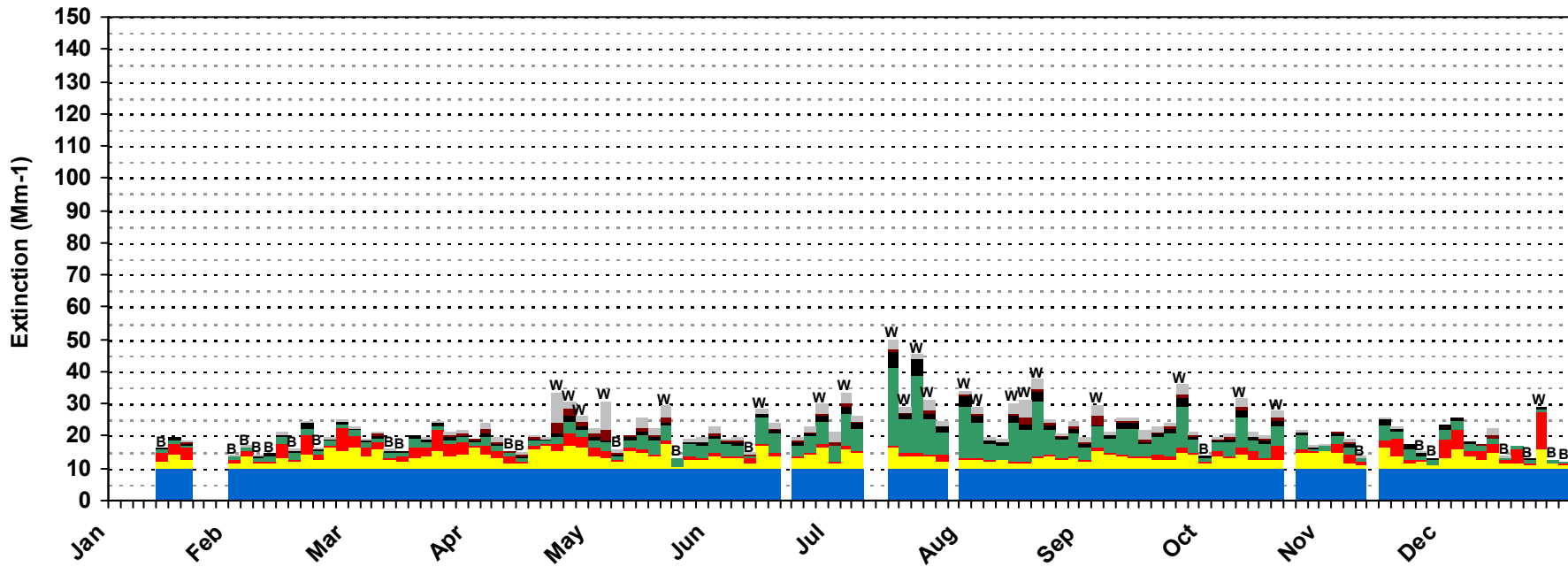
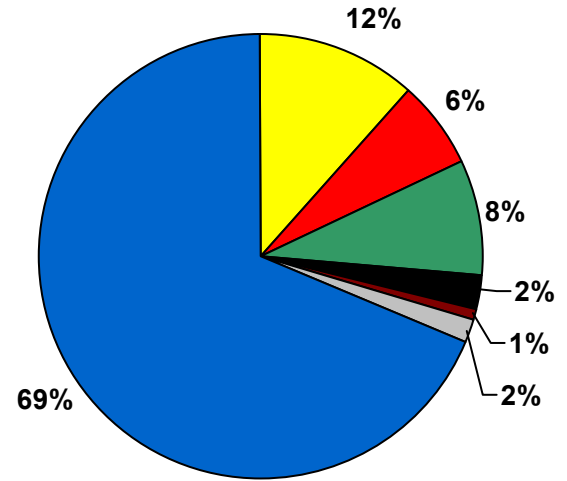
# MONITORING DATA

## Yellowstone National Park, WY 2002 Reconstructed Extinction YELL2 Monitoring Data (every third day)

**20% Worst Visibility Days**  
Total Extinction = 32 Mm-1 (26 to 50 Mm-1)



**20% Best Visibility Days**  
Total Extinction = 15 Mm-1 (12 to 17 Mm-1)



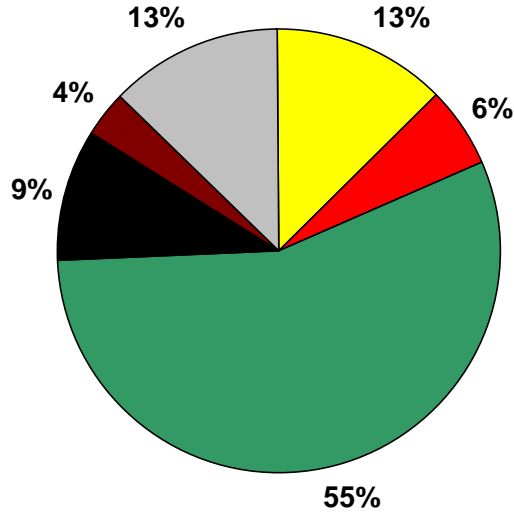
**MONITORING DATA**

**Yellowstone National Park, WY  
2002 Reconstructed Extinction  
YELL2 Monitoring Data (every third day)**

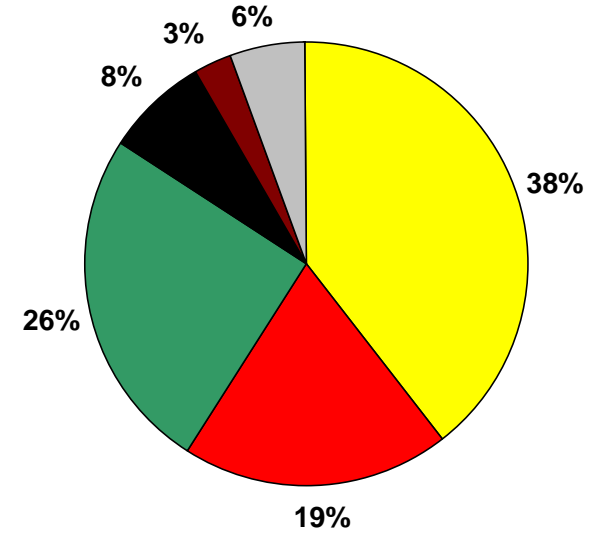
**"RAW" DATA**

- No RHR data substitutions
- Includes available data from days with clogged filters

**20% Worst Visibility Days**  
Aerosol Extinction\* = 33 Mm<sup>-1</sup> (18 to 220 Mm<sup>-1</sup>)

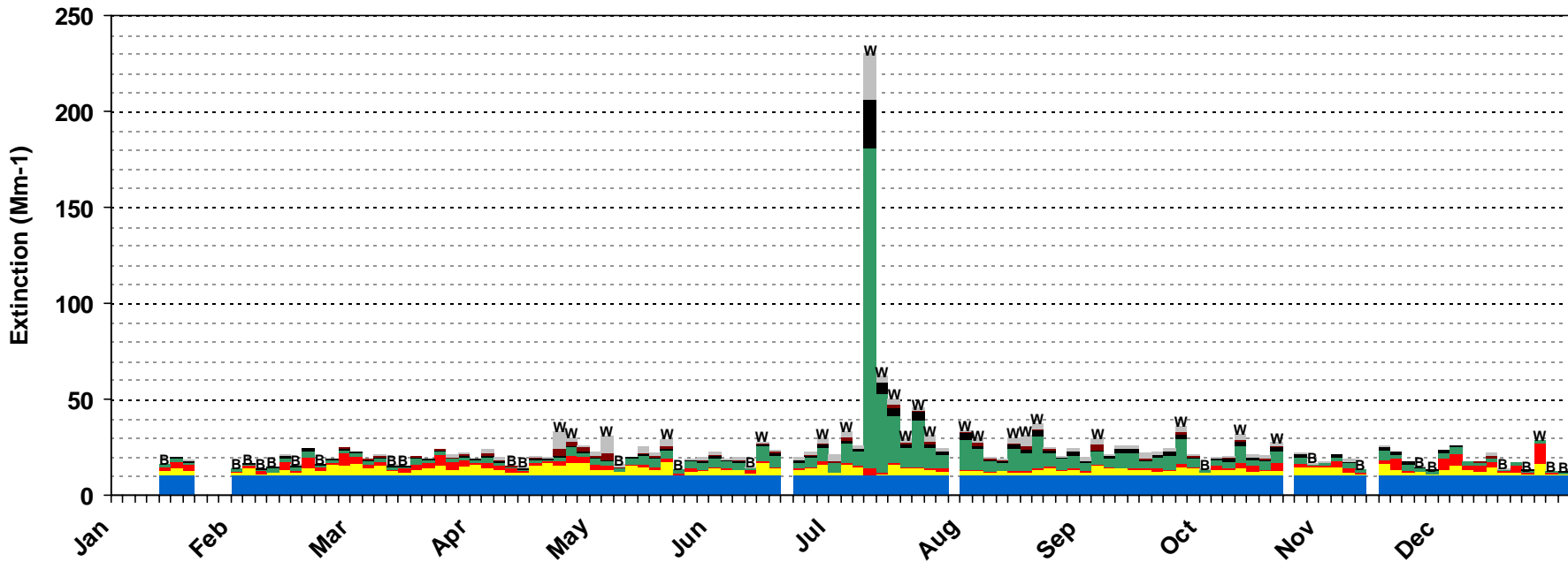


**20% Best Visibility Days**  
Aerosol Extinction\* = 5 Mm<sup>-1</sup> (2 to 7 Mm<sup>-1</sup>)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

\*Excludes Rayleigh Extinction



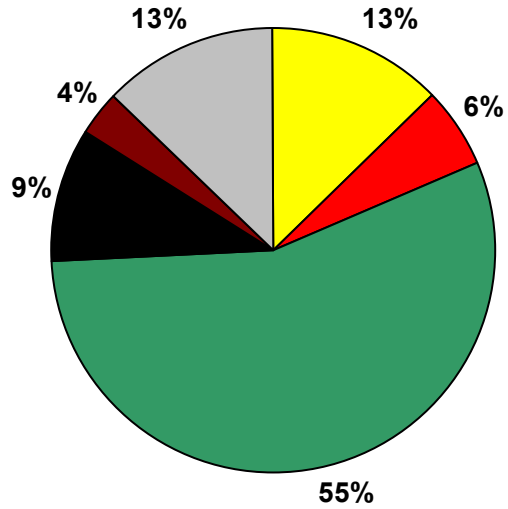
**MONITORING DATA**

**Yellowstone National Park, WY  
2002 Reconstructed Extinction  
YELL2 Monitoring Data (every third day)**

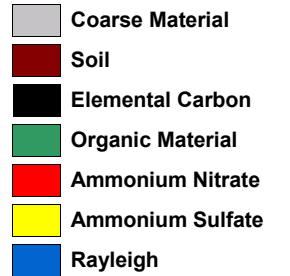
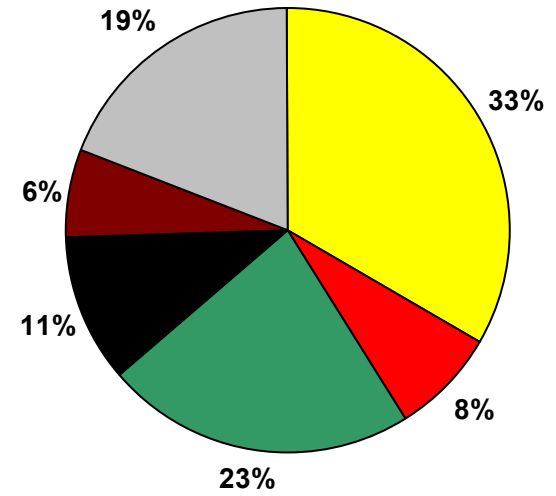
**"RAW" DATA**

- No RHR data substitutions
- Includes available data from days with clogged filters

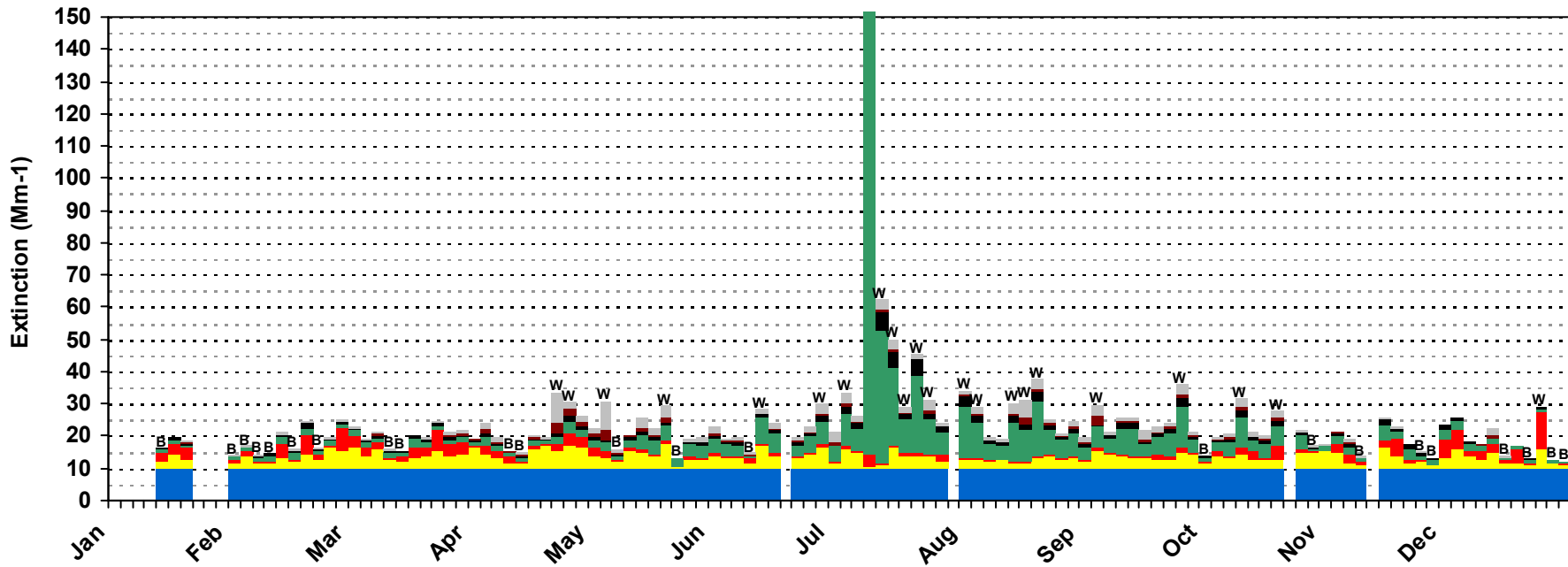
**20% Worst Visibility Days**  
Aerosol Extinction\* = 33 Mm-1 (18 to 220 Mm-1)



**20% Best Visibility Days**  
Aerosol Extinction\* = 5 Mm-1 (2 to 7 Mm-1)



\*Excludes Rayleigh Extinction



## MONITORING DATA

### Yellowstone National Park, WY 2002 Reconstructed Extinction Values YELL2 Monitoring Data (every third day)

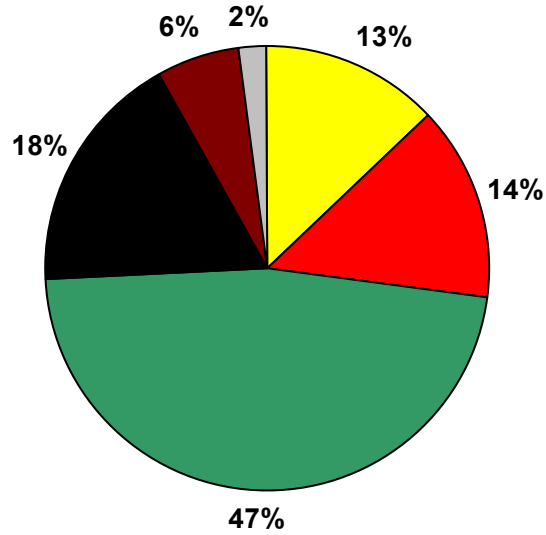
<b>20% Worst Visibility Days</b>			
	<b>Average (Mm-1)</b>	<b>Minimum (Mm-1)</b>	<b>Maximum (Mm-1)</b>
<b>Total Extinction:</b>	32.4 (11.8 dv)	26.1 (9.6 dv)	49.9 (16.1 dv)
<b>Aerosol Extinction*:</b>	22.4	16.1	39.9
	<b>Average (Mm-1)</b>	<b>% of Tot. Extinction</b>	<b>% of Aer. Extinction</b>
<b>Ammonium Sulfate:</b>	4.6	14%	21%
<b>Ammonium Nitrate:</b>	1.9	6%	9%
<b>Organic Material:</b>	9.6	30%	43%
<b>Elemental Carbon:</b>	1.9	6%	8%
<b>Soil:</b>	1.3	4%	6%
<b>Coarse Material:</b>	3.1	10%	14%
<b>Rayleigh:</b>	10.0	31%	N/A
<b>20% Best Visibility Days</b>			
	<b>Average (Mm-1)</b>	<b>Minimum (Mm-1)</b>	<b>Maximum (Mm-1)</b>
<b>Total Extinction:</b>	14.6 (3.8 dv)	12.2 (2.0 dv)	16.7 (5.1 dv)
<b>Aerosol Extinction*:</b>	4.6	2.2	6.7
	<b>Average (Mm-1)</b>	<b>% of Tot. Extinction</b>	<b>% of Aer. Extinction</b>
<b>Ammonium Sulfate:</b>	1.7	12%	37%
<b>Ammonium Nitrate:</b>	0.9	6%	20%
<b>Organic Material:</b>	1.2	8%	26%
<b>Elemental Carbon:</b>	0.4	2%	8%
<b>Soil:</b>	0.1	1%	3%
<b>Coarse Material:</b>	0.2	1%	4%
<b>Rayleigh:</b>	10.0	69%	N/A

\*Excludes Rayleigh Extinction

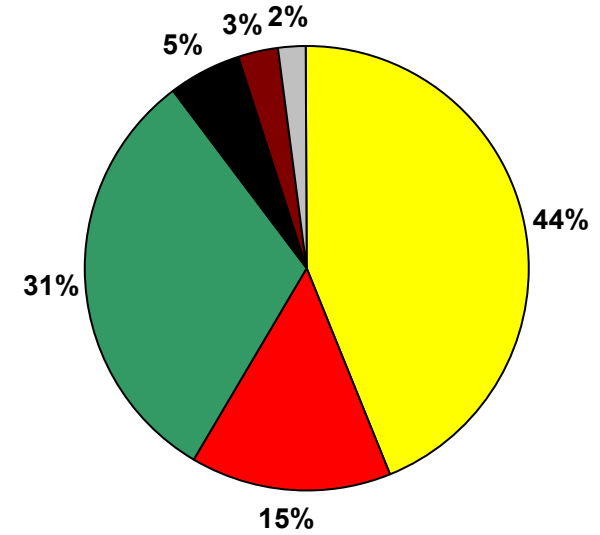
# MODEL RESULTS

## Yellowstone National Park, WY 2002 Reconstructed Extinction CMAQ Model Results (every day)

**20% Worst Visibility Days**  
Aerosol Extinction\* = 50 Mm<sup>-1</sup> (19 to 384 Mm<sup>-1</sup>)

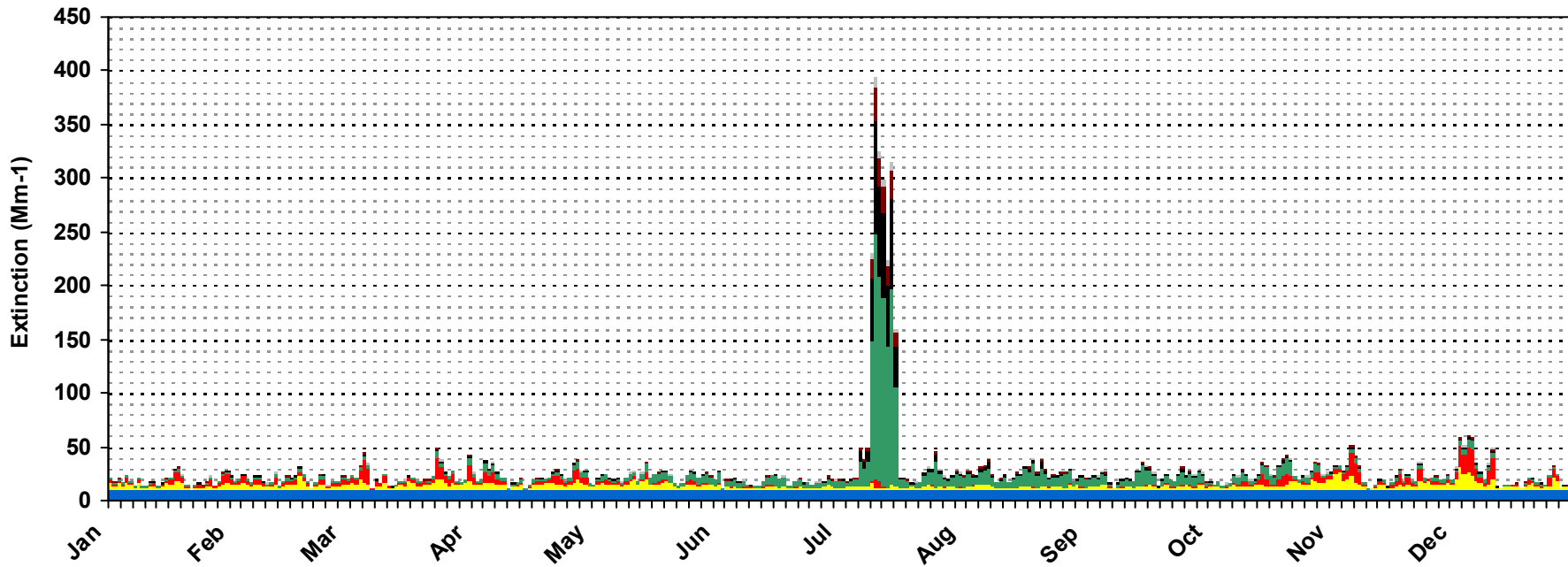


**20% Best Visibility Days**  
Aerosol Extinction\* = 4 Mm<sup>-1</sup> (1 to 7 Mm<sup>-1</sup>)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

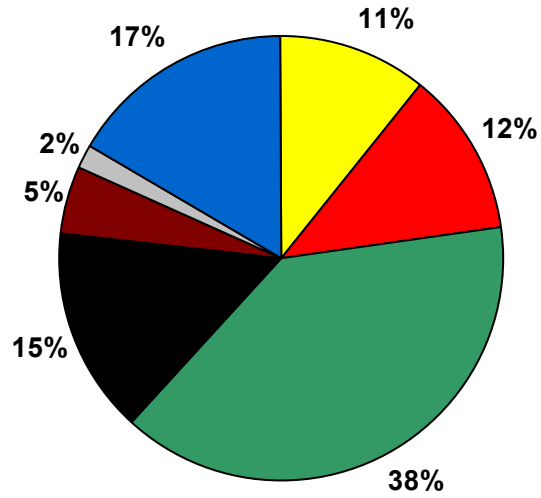
\*Excludes Rayleigh Extinction



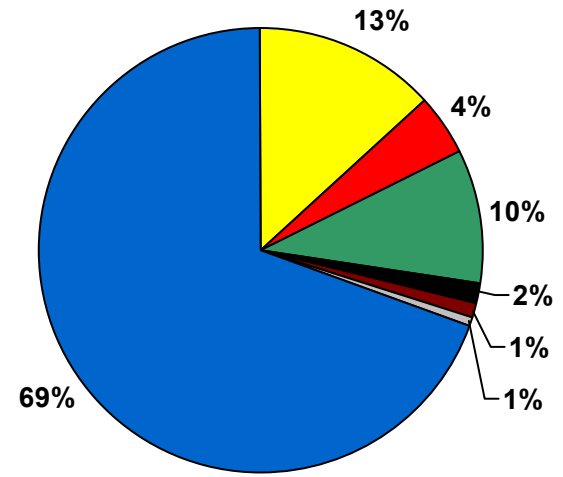
# MODEL RESULTS

## Yellowstone National Park, WY 2002 Reconstructed Extinction CMAQ Model Results (every day)

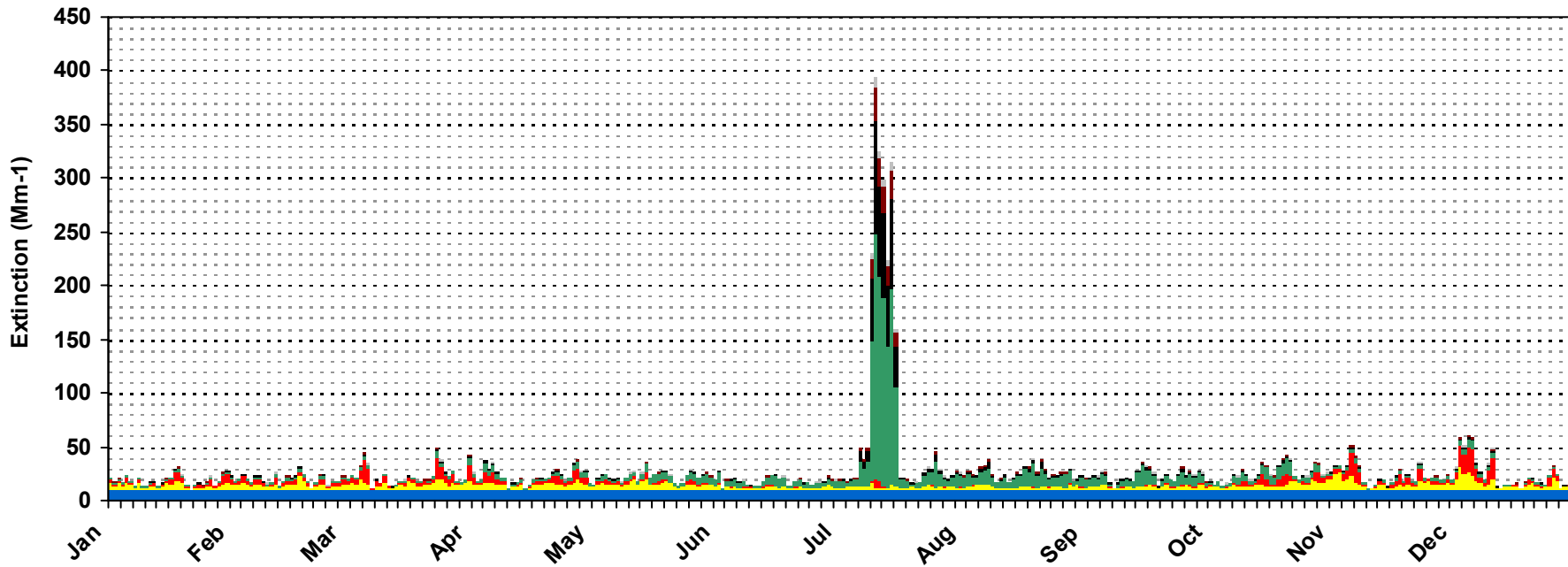
**20% Worst Visibility Days**  
Total Extinction = 60 Mm-1 (29 to 394 Mm-1)



**20% Best Visibility Days**  
Total Extinction = 14 Mm-1 (11 to 17 Mm-1)



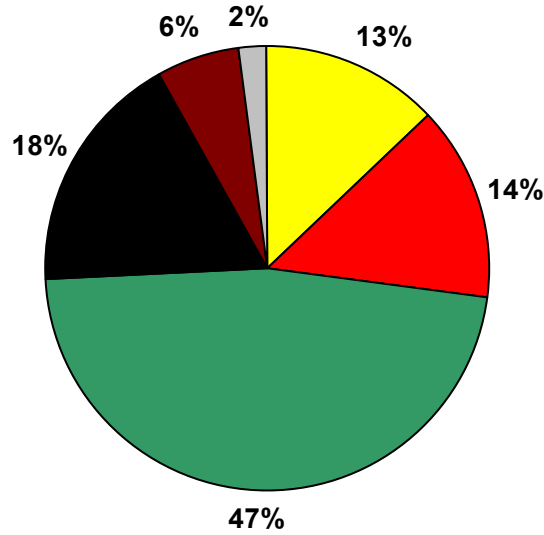
- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh



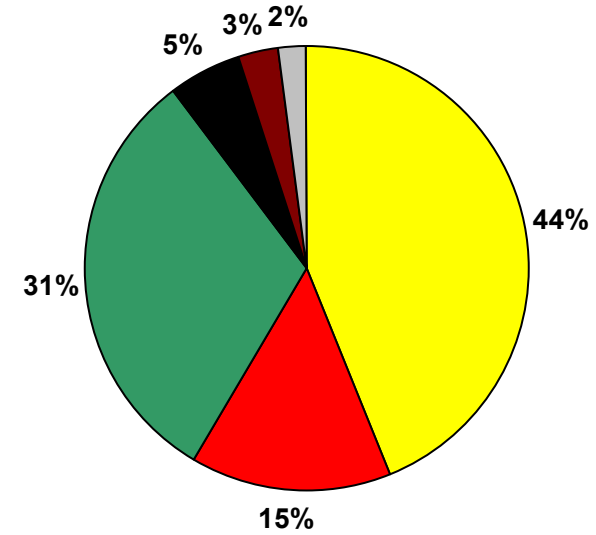
# MODEL RESULTS

## Yellowstone National Park, WY 2002 Reconstructed Extinction CMAQ Model Results (every day)

**20% Worst Visibility Days**  
Aerosol Extinction\* = 50 Mm-1 (19 to 384 Mm-1)

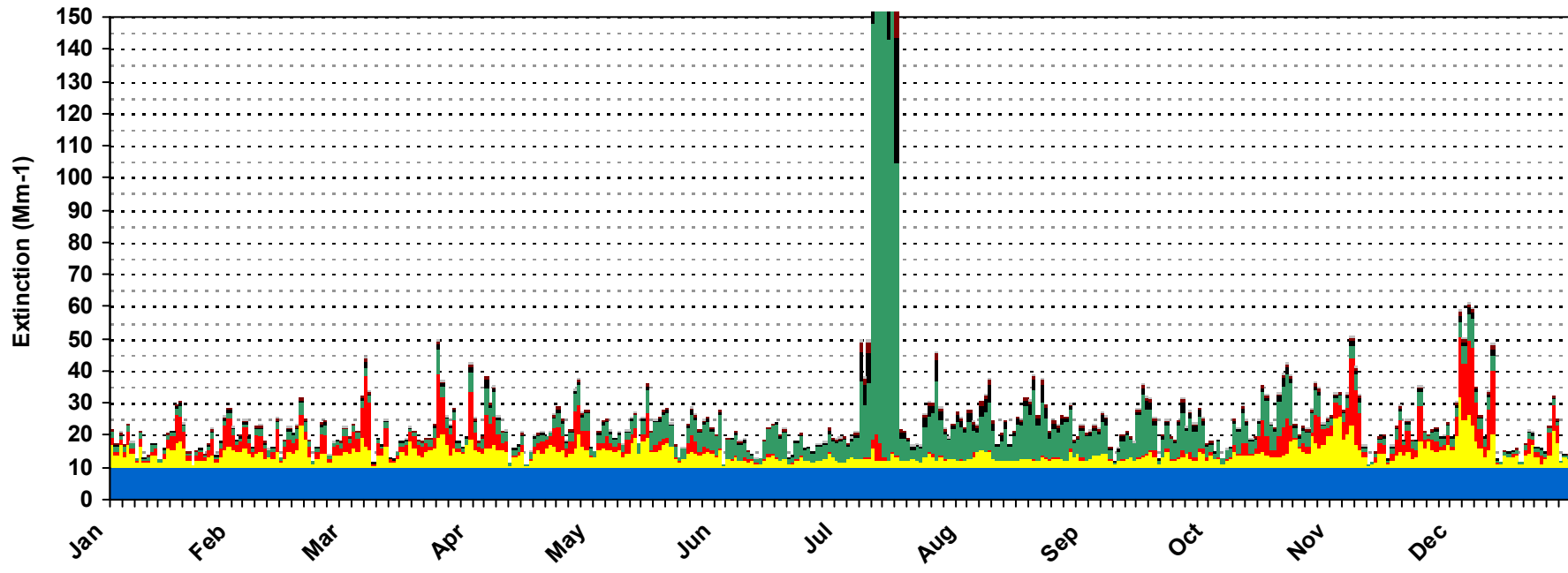


**20% Best Visibility Days**  
Aerosol Extinction\* = 4 Mm-1 (1 to 7 Mm-1)



- Coarse Material
- Soil
- Elemental Carbon
- Organic Material
- Ammonium Nitrate
- Ammonium Sulfate
- Rayleigh

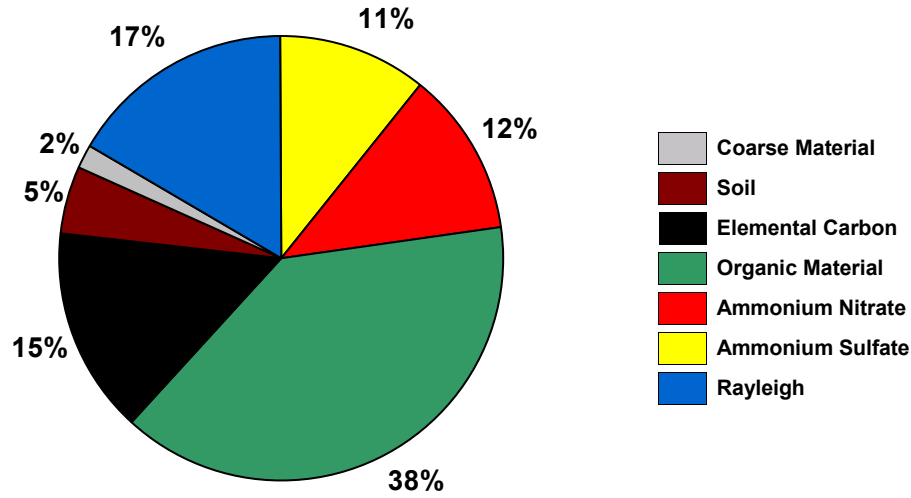
\*Excludes Rayleigh Extinction



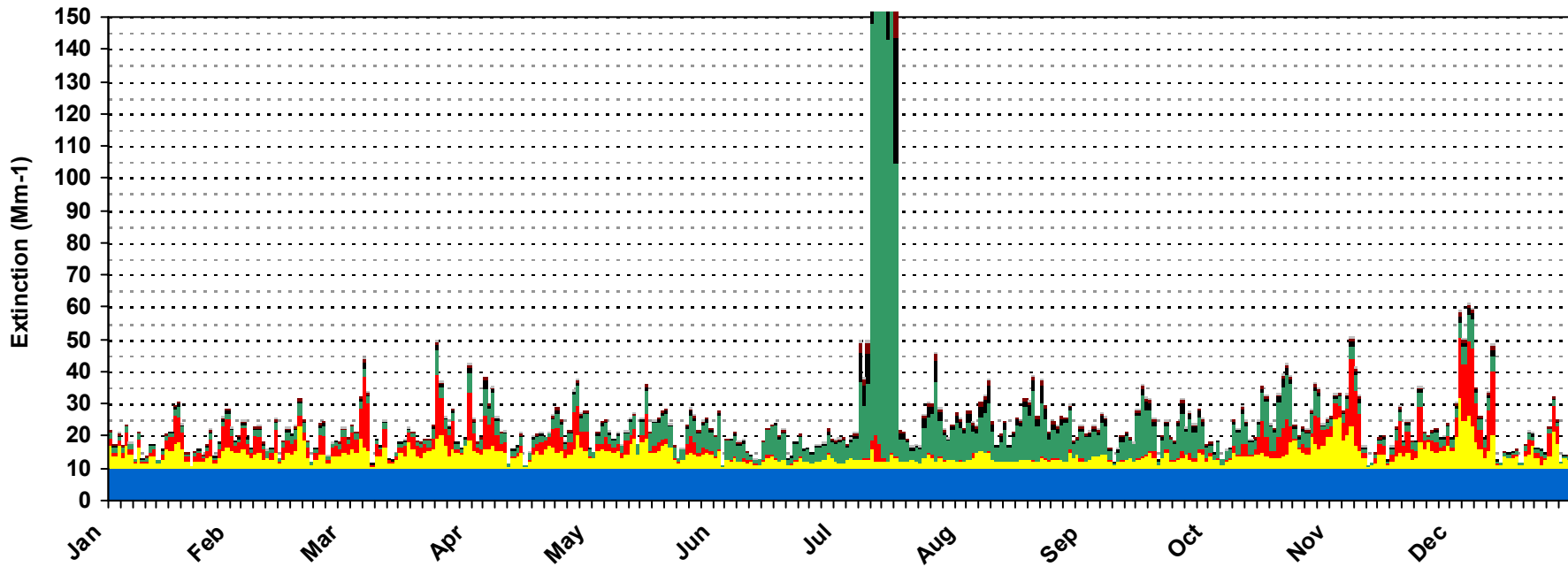
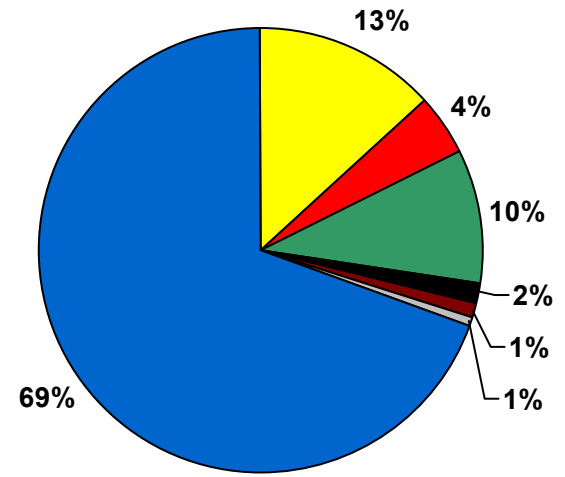
# MODEL RESULTS

## Yellowstone National Park, WY 2002 Reconstructed Extinction CMAQ Model Results (every day)

**20% Worst Visibility Days**  
Total Extinction = 60 Mm-1 (29 to 394 Mm-1)



**20% Best Visibility Days**  
Total Extinction = 14 Mm-1 (11 to 17 Mm-1)



## MODEL RESULTS

### Yellowstone National Park, WY 2002 Reconstructed Extinction CMAQ Model Results (every day)

<b>20% Worst Visibility Days</b>			
	<b>Average (Mm-1)</b>	<b>Minimum (Mm-1)</b>	<b>Maximum (Mm-1)</b>
<b>Total Extinction:</b>	59.8 (17.9 dv)	28.6 (10.5 dv)	393.6 (36.7 dv)
<b>Aerosol Extinction*:</b>	49.8	18.6	383.6
	<b>Average (Mm-1)</b>	<b>% of Tot. Extinction</b>	<b>% of Aer. Extinction</b>
<b>Ammonium Sulfate:</b>	6.5	11%	13%
<b>Ammonium Nitrate:</b>	7.1	12%	14%
<b>Organic Material:</b>	23.4	39%	47%
<b>Elemental Carbon:</b>	8.9	15%	18%
<b>Soil:</b>	3.0	5%	6%
<b>Coarse Material:</b>	1.0	2%	2%
<b>Rayleigh:</b>	10.0	17%	N/A
<b>20% Best Visibility Days</b>			
	<b>Average (Mm-1)</b>	<b>Minimum (Mm-1)</b>	<b>Maximum (Mm-1)</b>
<b>Total Extinction:</b>	14.4 (3.6 dv)	10.6 (0.6 dv)	17.0 (5.3 dv)
<b>Aerosol Extinction*:</b>	4.4	0.6	7.0
	<b>Average (Mm-1)</b>	<b>% of Tot. Extinction</b>	<b>% of Aer. Extinction</b>
<b>Ammonium Sulfate:</b>	1.9	13%	44%
<b>Ammonium Nitrate:</b>	0.6	4%	15%
<b>Organic Material:</b>	1.4	10%	31%
<b>Elemental Carbon:</b>	0.2	2%	5%
<b>Soil:</b>	0.1	1%	3%
<b>Coarse Material:</b>	0.1	1%	2%
<b>Rayleigh:</b>	10.0	69%	N/A

\*Excludes Rayleigh Extinction